

App. No. 10/584,725  
Office Action Dated April 14, 2008

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**Amendments to the Claims:**

This listing of claims will replace all prior versions and listing of claims in the application.

**Listing of Claims:**

1. (CURRENTLY AMENDED) A method for producing a ~~Group III nitride~~ GaN crystal comprising:  
growing a crystal in a nitrogen-containing atmosphere by reacting ~~at least one Group III element selected from Ga, Al, and In~~ with nitrogen in a melt that includes Ga, nitrogen and [[a]] flux components ~~including an alkali metal~~,  
wherein ~~the flux further includes Mg~~ the flux components are Na and Mg,  
the melt is formed by heating Ga, Mg and purified Na in a nitrogen-containing atmosphere, and  
a proportion of Mg in a sum of Na and Mg is in a range of 0.1 to 5 mol%.
2. (CURRENTLY AMENDED) The method according to claim 1, wherein Mg of the ~~flux melt~~ functions as ~~at least one of a flux component and~~ a doping component.
3. (CURRENTLY AMENDED) The method according to claim 1, wherein the ~~flux melt~~ includes as a doping component at least one selected from an alkaline-earth metal and Zn.
4. (ORIGINAL) The method according to claim 1, wherein the nitrogen is supplied as a nitrogen-containing gas.
5. (ORIGINAL) The method according to claim 3, wherein the alkaline-earth metal is at least one selected from Ca, Be, Sr, and Ba.
- 6-8. (CANCELED)

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9. (CURRENTLY AMENDED) A ~~Group III-nitride~~ GaN crystal produced by the method according to claim 1, the GaN crystal containing Mg and at least one of Ca and Zn,  
wherein a doping amount of Mg is more than 0 and not more than  $1 \times 10^{20} \text{ cm}^{-3}$ .
- 10-11. (CANCELED)
12. (CURRENTLY AMENDED) The ~~Group III-nitride~~ GaN crystal according to claim 9, wherein an oxygen concentration of the crystal is 0 to  $1 \times 10^{17} \text{ cm}^{-3}$ .
13. (CURRENTLY AMENDED) The ~~Group III-nitride~~ GaN crystal according to claim 9, wherein a resistivity (specific resistance) is not less than  $1 \times 10^3 \Omega\text{-cm}$ .
14. (CURRENTLY AMENDED) The ~~Group III-nitride~~ GaN crystal according to claim 9, wherein a resistivity (specific resistance) is not less than  $1 \times 10^5 \Omega\text{-cm}$ .
15. (CURRENTLY AMENDED) A ~~Group III-nitride~~ GaN substrate comprising the ~~Group III-nitride~~ GaN crystal according to claim 9.
16. (CURRENTLY AMENDED) The ~~Group III-nitride~~ GaN substrate according to claim 15, wherein the substrate is a p-type substrate or a semi-insulating substrate.
17. (CURRENTLY AMENDED) A field-effect transistor comprising the ~~Group III-nitride~~ GaN substrate according to claim 16.
18. (NEW) The method according to claim 1, wherein the purified Na is Na having a purity of 99.99%
19. (NEW) The method according to claim 1, wherein the melt includes as a doping component at least one of Ca and Zn.